

Title (en)  
Control apparatus for hybrid vehicle with cylinder deactivation

Title (de)  
Steuerungsverfahren zum Ab- und Zuschalten einzelner Zylinder eines Hybridfahrzeugs

Title (fr)  
Procédé de régulation pour désactiver un cylindre dans un véhicule hybride

Publication  
**EP 1232894 B1 20071205 (EN)**

Application  
**EP 02003658 A 20020218**

Priority  
JP 2001043930 A 20010220

Abstract (en)  
[origin: EP1232894A2] A hybrid vehicle control apparatus is provided which can improve fuel consumption. There is provided: a cylinder cut-off determination section (F\_ALCSSTB) for determining whether all cylinders should be cut off; a cylinder cut-off cancellation determination section (F\_ALCSSTP) for determining whether cylinder cut-off cancellation conditions have been satisfied; a cylinder cut-off execution section (F\_ALCSSOL) for operating a spool valve (SV) when the cylinder cut-off determination section determines that cylinder cut-off is possible; and a cylinder cut-off control section (F\_ALCS) for cutting off the cylinders of the engine based on the operating conditions of the cylinder cut-off determination section, the cylinder cut-off cancellation determination section and the cylinder cut-off execution section. When the voltage of an auxiliary battery (4), being the drive source of the spool valve, is at or greater than a predetermined voltage, and the oil temperature (TOIL) is within a predetermined range, the cylinder cut-off determination section determines that cylinder cut-off is possible.

IPC 8 full level  
**B60K 6/04** (2006.01); **B60K 6/20** (2007.10); **B60K 6/24** (2007.10); **B60K 6/485** (2007.10); **B60K 6/543** (2007.10); **B60K 6/547** (2007.10); **B60L 7/10** (2006.01); **B60L 11/14** (2006.01); **B60L 50/15** (2019.01); **B60L 50/16** (2019.01); **B60W 10/06** (2006.01); **B60W 10/18** (2006.01); **B60W 20/00** (2006.01); **F01L 13/00** (2006.01); **F02D 13/06** (2006.01); **F02D 17/02** (2006.01); **F02D 29/02** (2006.01); **F02D 29/06** (2006.01); **F02D 41/12** (2006.01); **F02D 41/36** (2006.01); **F02D 45/00** (2006.01)

CPC (source: EP KR US)  
**B60K 6/485** (2013.01 - EP US); **B60K 6/54** (2013.01 - EP US); **B60K 6/543** (2013.01 - EP US); **B60L 7/10** (2013.01 - KR); **B60L 50/16** (2019.01 - EP US); **B60W 10/06** (2013.01 - EP US); **B60W 20/13** (2016.01 - US); **F01L 13/0005** (2013.01 - EP US); **F01L 13/0036** (2013.01 - EP US); **F02D 17/02** (2013.01 - EP US); **F02D 41/0087** (2013.01 - EP US); **F02D 41/123** (2013.01 - EP US); **B60L 2240/441** (2013.01 - EP US); **B60L 2240/445** (2013.01 - EP US); **B60L 2240/486** (2013.01 - EP US); **B60L 2240/662** (2013.01 - EP US); **B60W 20/00** (2013.01 - EP); **B60W 2510/0604** (2013.01 - EP US); **B60W 2510/0638** (2013.01 - EP US); **B60W 2510/0652** (2013.01 - EP US); **B60W 2510/0671** (2013.01 - EP US); **B60W 2510/0676** (2013.01 - EP US); **B60W 2510/1005** (2013.01 - EP US); **B60W 2510/244** (2013.01 - EP US); **B60W 2520/10** (2013.01 - EP US); **B60W 2540/12** (2013.01 - EP US); **B60W 2555/20** (2020.02 - EP US); **B60W 2710/0605** (2013.01 - EP US); **F02D 2041/0012** (2013.01 - EP US); **Y02T 10/62** (2013.01 - EP US); **Y02T 10/70** (2013.01 - US); **Y02T 10/7072** (2013.01 - EP US); **Y02T 10/72** (2013.01 - EP US); **Y02T 90/16** (2013.01 - EP US); **Y10S 903/903** (2013.01 - EP US); **Y10S 903/905** (2013.01 - EP US); **Y10S 903/917** (2013.01 - EP US); **Y10S 903/918** (2013.01 - EP US); **Y10S 903/919** (2013.01 - EP US); **Y10S 903/947** (2013.01 - EP US)

Cited by  
EP1493608A3; US6943460B2; CN103047025A; US7490685B2; WO2004024486A1

Designated contracting state (EPC)  
DE FR GB

DOCDB simple family (publication)  
**EP 1232894 A2 20020821**; **EP 1232894 A3 20060118**; **EP 1232894 B1 20071205**; CA 2369859 A1 20020820; CA 2369859 C 20050816; CN 1246168 C 20060322; CN 1371821 A 20021002; DE 60223858 D1 20080117; DE 60223858 T2 20080403; JP 2002242719 A 20020828; KR 100456997 B1 20041110; KR 20020068274 A 20020827; US 2002115526 A1 20020822; US 6616570 B2 20030909

DOCDB simple family (application)  
**EP 02003658 A 20020218**; CA 2369859 A 20020130; CN 02105063 A 20020219; DE 60223858 T 20020218; JP 2001043930 A 20010220; KR 20020008486 A 20020218; US 7108402 A 20020211